

MUKHIN A.A.

Acc. Nr.: AN0104123

Ref. Code: UR 9003

TITLE-- ANNOUNCEMENT OF THE COMMITTEE ON LENIN AND STATE PRIZES, U.S.S.R. 49

NEWSPAPER-- IZVESTIYA, MAY 28, 1970, P 4, COLS 1-5

ABSTRACT-- NINETY ONE BASIC AND APPLIED RESEARCH WORKS HAVE BEEN NOMINATED FOR THE STATE PRIZES. TWO OF THESE, "THE MULTI-PURPOSE INDUSTRIAL HELICOPTER KA-26", BY N. I. KAMOV, V. B. ALPEROVICH, V. B. BARSHEVSKIY, A. A. DMITRIYEV, G. I. IOFFE, M. A. KUPFER, L. A. POTASHNIK, N. N. PRIOROV, A. G. SATAROV, I. M. VEDENEYEV, S. B. BREN, AND V. A. NAZAROV, AND "THE DEVELOPMENT OF TURBOFAN JET ENGINES NK-8 AND NK-8-4, AND THE DEVELOPMENT AND REDUCTION TO SERIAL PRODUCTION A SYSTEM OF TECHNOLOGICAL PROCESSES WHICH ASSURED WIDE USES FOR TITANIUM ALLOYS", BY N. D. KUZNETSOV, M. T. VASILISHIN, V. A. KURGANOV, P. M. MARKIN, V. D. RADCHENKO, P. A. SUKHOV, A. A. MUKHIN, V. G. SHITOV, G. I. MUSHENKO, L. A. SHKODO, AND G. P. DOLGOLENKO, HAVE BEEN SUBMITTED BY THE MINISTRY OF THE AVIATION INDUSTRY.

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Reel/Frame  
19870555

Acc. Nr.: AN0104123

"A SERIES OF INVESTIGATIONS INTO THE DYNAMICS OF A BODY WITH FLUID-FILLED CAVITIES", /65-68/, BY N. N. MOISEYEV, A. A. PETROV, V. V. RUMYANTSEV AND F. L. CHERNOUSKO AND "ULTRA HIGH PRECISION JIG BORING MILLS WITH 1,000 X 1,600 AND 1,400 X 2,240 MM PLATENS", BY A. I. KIRYANOV, V. G. ABRAMOVICH, I. V. GUTKIN, A. S. ALIMPIYEV, G. B. PAUKOV, AND A. S. YEGUDKIN, HAVE BEEN SUBMITTED BY THE COMPUTATION CENTER OF THE ACADEMY OF SCIENCES AND THE MINISTRY OF THE MACHINE TOOL CONSTRUCTION AND TOOL INDUSTRY, RESPECTIVELY.

"THE RADICALLY IMPROVED MELTING TECHNOLOGY OF CRITICAL-PURPOSE HIGH-ALLOY STEELS AND ALLOYS OF IMPROVED QUALITY ACHIEVED BY THE INERT GAS TREATMENT OUTSIDE THE FURNACE", BY YU. V. GERASIMOV, O. M. CHEKHOMOV, N. V. SIDOROV, S. K. FILATOV, B. A. CHEREMNYKH, R. M. KHAYRUTDINOV, I. P. BARMOTIN, L. K. KOSYREV, K. P. BAKANOV, N. N. VLASOV, P. I. MELIKHOV, AND N. A. TULIN, HAS BEEN SUBMITTED BY THE ZLATOUST METALLURGICAL PLANT.

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Reel/Frame  
19870556

KZ

USSR

MUKHIN, A. B.

"The Concentration of Distributions of Sums of Independent Random Quantities"

Izv. AN UzSSR. Ser. Fiz-Mat. N. [News of Academy of Sciences, UzSSR, Physics-Mathematical Sciences Series], 1973, No 2, pp 25-29 (Translated from Referativnyy Zhurnal Kibernetika, No 9, 1973, Abstract No 9V7)

Translation: A number of estimates are presented of the concentration functions of sums of independent random quantities, expressed through the dispersions of components or their "curtailments," as well as certain quantities characterizing the concentration of components in the grid. The estimates suggested allow us to judge the decrease in the concentration function

$$Q(S_n, \lambda) = \sup_{-\infty < x < +\infty} P\{x \leq S_n \leq x + \lambda\} \text{ where } S_n = \sum_{i=1}^n \xi_i,$$

$\{\xi_k\}$  is a sequence of independent random quantities with distribution functions  $F_k(x)$ , where  $\lambda \rightarrow 0$  as  $n \rightarrow \infty$ .

Author's view

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UDC: 519.217

USSR

MUKHIN, A. B.

"On a Symmetric Random Walk in a Rectangle With Reflecting Sides"

Nauch. tr. Tashkent. un-t (Scientific Works. Tashkent University), 1970, vyp. 394, pp 118-128 (from RZh-Kibernetika, No 11, Nov 71, Abstract No 11V108)

Translation: The author considers a symmetric random walk in the rectangle  $G(a,b) = \{(x,y) : -a \leq x \leq a, -b \leq y \leq b\}$  with reflection on the boundary, and studies the conditions of convergence of the distribution of the position of the walk after  $n$  steps  $(\tilde{f}_n, \tilde{g}_n)$  to uniform distribution in  $G(a,b)$  as  $n \rightarrow \infty$ .  
D. Sil'vestrov.

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1/2 012 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--EXCITED NUCLEAR STATES DURING CAPTURE OF NEGATIVE MUONS BY CARBON  
AND OXYGEN -U-  
AUTHOR--(05)--BUDYASHOV, YU.G., ZINOV, V.G., KONIN, A.D., MEDVED, S.V.,  
MUKHIN, A.I.  
COUNTRY OF INFO--USSR  
SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, 1970, VOL 53,  
NR 4, PP 1211-1218  
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--NUCLEAR ENERGY LEVEL, EXCITED NUCLEUS, MESON INTERACTION,  
MUON, CARBON ISOTOPE, OXYGEN ISOTOPE, NUCLEAR SPIN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1989/1892

STEP NO--UR/0056/70/058/004/1211/1218

CIRC ACCESSION NO--AP0108222

UNCLASSIFIED

PROCESSING DATE--23OCT70

UNCLASSIFIED

2/2 012

CIPC ACCESSION NO--AP0108222

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE PROBABILITIES FOR FORMATION OF  
EXCITED LEVELS OF THE DAUGHTER NUCLEI PRODUCED BY CAPTURE OF NEGATIVE  
MUONS BY CARBON OR OXYGEN NUCLEI ARE STUDIED. THE TOTAL TRANSITION RATE  
TO ALL EXCITED BOUND STATES OF THE B PRIME12 SEXTILE NUCLEUS IS  
DETERMINED FOR THE C PRIME12 PLUS MUNEGATIVE YIELDS B PRIME12 SEXTILE  
PLUS V REACTION; IT IS EQUAL TO (0.76 PLUS OR MINUS 0.14) TIMES 10  
PRIME3 SEC NEGATIVE1. FOR THE O PRIME16 PLUS MUNEGATIVE YIELDS MINUS N  
PRIME15 SEXTILE PLUS N PLUS V REACTION THE TOTAL TRANSITION RATE TO N  
PRIME15 SEXTILE EXCITED BOUND STATES WITH POSITIVE PARITY IS FOUND TO BE  
(14 PLUS OR MINUS 5) TIMES 10 PRIME3 SEC NEGATIVE1 AND THE TRANSITION  
RATE TO THE N PRIME15 SEXTILE SPIN THREE HALVES LEVEL IS (20 PLUS OR  
MINUS 5) TIMES 10 PRIME3 SEC NEGATIVE1. PART OF THE RESULTS STRONGLY  
DIFFER FROM THE THEORETICAL PREDICTIONS. FACILITY:  
OB"YEDINENNYI INSTITUT YADERNYKH ISSLEDOVANIY.

UNCLASSIFIED

MUKHIN, B.

MUKHIN, B.

Gossnab

PROPOSALS TO IMPROVE WAREHOUSING EFFICIENCY

Article by B. Mukhin, Deputy Chief of the Technical Administration of the USSR Gossnab: "Technical Progress in Warehousing", Moscow, Materialno-Tekhnicheskoye Stroitel'stvo, Russian, No 10, October 1970, pp 3-5.

A rise in the efficiency of social production and a significant increase in labor productivity on the basis of the freest possible use of scientific and technical achievements, on improvement in the organization of labor and the working style of all participants in social production, as well as an improvement in national economic planning and management -- all of this comprises the basic link in the chain of scientific problems confronting our state at the present stage. The essence of the economic policy of the CPSU and the Soviet state was so defined by L. I. Brezhnev in his report devoted to the centennial birthday of V. I. Lenin.

In pointing, in line with this, to the particular role of science and technology, L. I. Brezhnev said: "At present, with the development level in the socialist economy which we have achieved, we have real opportunities to bring about a rapid rise in the economy predominantly by intensifying all sectors. The main thing needed for this is to accelerate all scientific and technical progress. This is how Lenin taught us."

In the system of the USSR Gossnab (State Committee for the USSR Council of Ministers on Material-Technical Supply), systematic work is being carried out to raise the effective use of warehousing on the basis of technical progress. Each year the main and territorial-technical supply

I. L. I. Brezhnev, 220 Lenin Zhivet i Pobezhdayet (The Concern of Lenin is Alive and Conquering), Political Publishing House, 1970, p 27.

USSR

UDC 621.777:669.715

BATURIN, A. I., SINEL'NIKOV, S. I., MUKHIN, G. G., and NIKIFOROV, L. D.

"Experimental Study of the Temperature Field in a Deformable Volume When Extruding Aluminum Alloys"

Moscow, Kuznechno-Shtampovochnoye Proizvodstvo, No 3, Mar 71, pp 6-8

Abstract: This article contains a discussion of the results of an experimental study of the temperature field when extruding an ingot of aluminum alloy by recording temperatures at the melting points of the pure metals, the eutectics, metal compounds, and peritectic mixtures. The essence of the method is use of miniature steel capsules inside which samples of defined shape made of the corresponding sensor metals are placed. The sensor metals are selected so that their melting points are within the investigated extrusion temperature range of 350-500°C with 5-15° intervals.

The procedures used to select the shape and size of the capsules and sensor metals and to determine the melting points of the sensor metals are described. An experiment is described in which several cycles of extruding bars of aluminum alloy on a horizontal 1,500 ton-force press were carried out.



USSR

BATURIN, A. I., et al., Kuznechno-Shtampovoye Proizvodstvo, No 3, Mar 71, pp 6-8

Experimental isotherms for the temperature distribution with respect to the deformable volume are presented. These isotherms were constructed from the experimental results after analyzing the state of the eutectics in the capsules located at various points in the billet and extrusion product with averaging of all the extrusion cycles. It is pointed out that the method does not permit exact data to be obtained on the actual temperature at a defined point of the deformable volume, but it gives a qualitative representation of the temperature field. The work was carried out under the direction of B. V. ROZANOV, Doctor of Technical Sciences. V. A. SHCHERBATOV participated in the investigation.

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1/2 010  
UNCLASSIFIED  
TITLE--EVALUATION OF AN AUTOMATIC PLATE AND FRAME FILTER PRESS WITH  
MECHANIZED PLATE CLAMPING -U-  
AUTHOR--ZAMBROVSKIY, V.A., ANIKEYEV, YU.V., TSYS, V.A., MUKHIN, I.L.  
COUNTRY OF INFO--USSR  
SOURCE--SAKH. PROM. 1970, 44(2), 22-7  
DATE PUBLISHED-----70  
SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, CHEMISTRY  
TOPIC TAGS--FILTRATION, PRESS, CHEMICAL AGENT FILTER  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1987/0155  
STEP NO--UR/0339/70/044/002/0022/0027  
CIRC ACCESSION NO--AP0103834  
UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0103834

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN AUTOMATIC PLATE AND FRAME FILTER PRESS WITH A FILTERING AREA OF 2.5 M PRIME2 IS DESCRIBED AND ITS PERFORMANCE IN A SUGAR FACTORY UNDER VARIED OPERATING CONDITIONS IS DETAILED. A TYPICAL CYCLE OF 28 MIN CONSISTED OF LIQUOR FLOW 17.2, WATER WASH AND COMPRESSION 8.2, AND NONPRODUCTIVE (CLEANING) OPERATIONS 2.6 MIN. SUGAR LOSSES WERE REDUCED TO 0.7PERCENT; CAKES CONTG. 30PERCENT H SUB2 O WERE PRODUCED; BY THE USE OF A PERLITE FILTER AID, 65-8PERCENT DENSE SIRUPS WERE FILTERED AT 8.9 1.-M PRIME2-MIN.

UNCLASSIFIED

USSR

Magnesium

UDC: 669.721.5:620.193

MUKHINA, I. Yu., TIMONOVA, M. A., SPIRYAKINA, G. N., Moscow

"Influence of Phase Composition on Corrosion Behavior of Magnesium Alloys"  
Moscow, Izvestiya Akademii Nauk SSSR, Metally, No 6, 1973, pp 208-212.

Abstract: The influence of aluminum and manganese on the corrosion behavior of magnesium has been studied extensively. The positive influence of the addition of manganese results from an increase in the hydrogen overvoltage on the alloy and the formation of a protective film. It is assumed that the phase  $Mg_{17}Al_{12}$  is an ineffective cathode. The role of other phase components when aluminum, manganese and iron are present in alloys remains unclear. This work was intended to study the influence of phases formed in the systems Mg-Al, Mg-Mn, Mg-Al-Mn containing iron as an impurity on the corrosion and electrochemical behavior of the alloys (containing from 0.42 to 9.3% Al, from 0 to 1.32% Mn and from 0.001 to 0.03% Fe) in a 3% solution of sodium chloride and in moist air. The phases fall in the following order as to stable potential:  $Mn_{17}Al_2 < \beta_{Mn} < Mn_5Al_8 < Fe_2Al_5$ . The cathode effectiveness consequently

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USSR

Mukhina, I. Yu., Timonova, M. A., Spiriyakina, G. N., Moscow, Izvestiya Akademii Nauk SSSR, Metally, No 6, 1973, pp 208-212.

increases in the same order. The sharp reduction in corrosion resistance of Mg-Al alloys containing hundredths of one percent of iron results from the formation of phases in the system Fe-Al ( $\text{FeAl} + \text{Fe}_2\text{Al}_5$ ), which are effective cathodes. The increase in the corrosion resistance of technical magnesium as manganese is introduced results from the inhibition of the cathode process upon formation of Fe-Mn solid solutions and the phase  $\beta_{\text{Mn(Fe)}}$ . The increase in the corrosion resistance of Mg-Al-Mn alloys containing hundredths of one percent of iron when up to one percent Mn is added results from the suppression of the formation of phases of aluminum with iron and the formation of a new phase --  $\beta_{\text{Mn}}$ , which has a negative potential and high hydrogen overvoltage.

172 005 UNCLASSIFIED PROCESSING DATE--20NDV70  
TITLE--TREATMENT OF CEMENT MORTARS -U-  
AUTHOR--(CS)--OGOLIKHIN, E.A., TIMOKHIN, I.P., TOKUNOVA, V.V., MALININA,  
A.I., MUKHIN, I.  
COUNTRY OF INFO--USSR  
SOURCE--U.S.S.R. 266,674  
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,  
DATE PUBLISHED--01APR70  
SUBJECT AREAS--MATERIALS  
TOPIC TAGS--CEMENT, CONSTRUCTION MATERIAL, PATENT, CELLULOSE  
CENTRCL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--3C02/1470 STEP NO--UR/0482/70/000/000/0000/0000  
CIRC ACCESSION NO--AAG128869  
UNCLASSIFIED

2/2 009 UNCLASSIFIED PROCESSING DATE--20NOV70  
CIRC ACCESSION NO--AAG128869  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CEMENT MORTARS WERE TREATED WITH  
ADDITIVES. TO REDUCE THE WATER LOSS FROM CEMENT MORTARS AT 20-70DEGREES  
AND TO RETARD HARDENING TIME AT LESS THAN 200DEGREES, 0.25-1.0 WT.  
PERCENT CARBOXYMETHYL SULFATE CELLULOSE WAS USED AS AN ADDITIVE.

UNCLASSIFIED

USSR

UDC 669.35'295'6'26:621.315.5(088.8)

FEDOROV, V. N., ROZENBERG, V. M., MUKHIN, N. I., GAS'KOVA, V. L., KOZHEVNIKOV, V. I., MATVEYEV, Yu. A., and POKROVSKAYA, G. N., State Scientific Research and Planning Institute of Alloys and Treatment of Nonferrous Metals

"Copper Base Alloy"

USSR Authors' Certificate No 263157, Cl. 40 b, 9/00, (C22c), filed 19 Nov 68, published 29 May 70 (from RZh-Metallurgiya, No 12, Dec 70, Abstract No 12 1849 P by A. ZIL'BERMAN)

Translation: An alloy is suggested which differs from known alloys in its lowered Ti and Sn content and which is characterized by the following composition (in %): Ti 0.03-0.15, Sn 0.1-0.25, Cr 0.05-0.6 and the remainder Cu. After hardening, cold deformation due to drawing, and tempering, the alloy has  $\sigma_B$  60 kg/sq mm,  $\delta$  4%, and conductivity 70% that of Cu. The alloy can be successfully employed as a current-carrying conductor.

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1/2 014  
TITLE--COPPER BASE ALLOY -U-

UNCLASSIFIED

*M* PROCESSING DATE--27NOV70

AUTHOR--(05)-FEDOROV, V.N., ROZENBERG, V.M., MUKHIN, N.I., GASKOVA, V.L.,  
KOZHEVNIKOV, V.I.  
COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 263,157  
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRATSY, TOVARNYE ZNAKI 1970,  
DATE PUBLISHED--04FEB70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--COPPER BASE ALLOY, METALLURGIC PATENT, TITANIUM CONTAINING  
ALLOY, TIN CONTAINING ALLOY, CHROMIUM CONTAINING ALLOY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/1057

STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0130092

UNCLASSIFIED

2/2 014 UNCLASSIFIED PROCESSING DATE--27NOV70  
CIRC ACCESSION NO--AA0130092  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TO RAISE THE CONO. OF A CU BASED  
ALLOY WITHOUT LOWERING ITS STRENGTH, IT HAS THE FOLLOWING COMPN.: TI  
0.03-0.15, SN 0.1-0.25, CR 0.05-0.6PERCENT, AND CU THE REMAINDER.  
FACILITY: STATE SCIENTIFIC RESEARCH AND DESIGN INSTITUTE OF ALLOYS AND  
PROCESSING OF NONFERROUS METALS.

UNCLASSIFIED

USSR

UDC: None

ARTEMENKOV, L. I., KOZLOV, P. I., MELIKHOV, P. I., MUKHIN, P. A.,  
and PAPKOV, L. N.

"Maintaining a String Plasma in the TOKAMAK TO-1 by an Automatic  
Control System"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, vol 17,  
No 5, 1973, pp 251-254

Abstract: The principal difficulty in controlling the maintenance of a string plasma in the Tokamak TO-1 is the amplification of the current induced in the control winding that occurs with shifts of the plasma. To cope with this and other control problems, the authors of this letter conducted experiments on the TO-1 to study the dependence of the microscopic characteristics of a plasma string on the time constant of the control winding within the range of 0.04-2 seconds. Typical oscillograms of the discharge at initial hydrogen pressures of  $2 \cdot 10^{-4}$  mm Hg, with a longitudinal magnetic field of 8.2 kgauss and a vertical correcting field of 23 gauss for two values of the control winding time constant, show that a duration of a plasma current pulse of as much as 400 msec is basically a function of the vertical correcting field. The curves for these functions are obtained. Examination of oscillograms taken by magnetic probes

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USSR

ARTEMENKOV, L. I., et al, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, vol 17, No 5, 1973, pp 251-254

measuring the shift in the plasma string along its large radius shows that it can be divided into three stages, each of which is analyzed. The authors express their thanks to I. N. Golovin for his comments and to N. N. Shvindt for conducting the optical measurements.

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USSR

UDC 616.71-001.5-003.93-092.9-02:615.837.3+615.849.112

LUCHKOV, V. I., and MUKHIN, P. YE., Central Clinical Hospital, Fourth Main Administration, Ministry of Health USSR, Moscow

"Comparison of the Effects of Ultrasound and Microwaves on the Healing of Fractures in Rabbits"

Moscow, Ortopedia, Travmatologiya i Protezirovaniye, No 9, 1971, pp 65-68

Abstract: The course of repair processes in rabbits after fracture of the radial bone and exposure of the injured area to various intensities of ultrasound (0.4 to 0.7 w/cm<sup>2</sup>) or microwaves (0.47 w/cm<sup>2</sup>) were studied by x-ray and histological methods. At various times after the trauma, the shadow or callus on the x-rays was more pronounced in the animals exposed to microwaves, an indication that the microwaves had a greater effect on callus formation than did ultrasound. Thus, microwaves are more likely to stimulate the healing of fractures in man than ultrasound. Histological examination failed to reveal any differences between the control and experimental rabbits.

USSR

UDC: 615.837.3.015.45:612.753

LUCHKOV, V. I., and MUKHIN, P. Ye., Central Clinical Hospital, Fourth Main Administration, Ministry of Health USSR, Moscow

"The Effect of Ultrasound on Callus Formation in Rabbits"

Moscow, Eksperimental'naya Khirurgiya i Anesteziologiya, No 6, Nov/Dec 70, pp 44-46

Abstract: The middle third of the radial bone of rabbits was sawed through and the operated area was exposed to ultrasound of various intensities daily for 7 days. On the 10th day, X-ray examination showed no significant differences between the control and experimental animals with respect to the condition of the callus. On the 20th day, the periosteal callus was largest in animals exposed to  $0.7 \text{ w/cm}^2$  for 8 minutes, beginning the 10th day after the operation (group 1), and smallest in the animals exposed to  $0.4 \text{ w/cm}^2$  for 5 minutes, beginning the 3rd day (group 2). The density of the callus was the same in the control and group 1 animals, but was appreciably higher in group 2 (exposure to  $0.7 \text{ w/cm}^2$  for 8 minutes beginning the 3rd day) and group 3 animals. Whereas on the 20th day the cleft in the bone of the control was still quite evident, it was barely perceptible in the group 2 and group 3 rabbits. Histological examination of the callus in control and experimental animals failed to reveal any significant differences.

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USSR

UDC: 531.754:621.039.85

KREYNDLIN, I. I., MIKHIN, S. S., NOVIKOV, V. S., PRAVIKOV, A. A.

"The RP-60 Radioactive-Isotope Densimeter"

Tr. VNII Radiats. Tekhn. [Works of All-Union Scientific Research Institute for Radiation Technology], 1972, No 7, pp 80-86 (Translated from Referativnyy Zhurnal Metrologiya i Izmeritel'naya Tekhnika, No 12, 1972, Abstract No 12.32.1187, by V. S. K.).

Translation: A general view and schematic diagram are presented for an apparatus for measurement of density of soils by a gammascopic method. The operation of the densimeter (D) is based on transmission of a beam of gamma rays, for example, those provided by Co<sup>60</sup> with an activity of 0.16  $\mu$ C, through the object being tested, and measurement of the attenuation of the rays by the object being studied, in this case soil. The radioactive D includes a DPG-2 sensor, a converter, an I-1 intensimeter (with strip chart recorder) and P-1 power supply with nominal voltage 12 v. The measurement range of the D is 1-2.3 g/cm; the measurement error is 0.08 g/cm; the sensor has a probe diameter of 61 mm; measurement depth is 5 m; the operating temperature ranges from -10 to +40° C. The RP-60 radioactive D has passed state testing and is recommended for series production. 3 figures, 2 bibliop. refs.

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USSR

UDC 621.791.14:669.715+669.14

POLUKHIN, P. I., Doctor of Technical Sciences, MUKHIN, S. V., Engineer (Moscow Institute of Steels and Alloys), and MASTEROV, V. A., Candidate of Technical Sciences (All-Union Correspondence Polytechnical Institute)

"Press Welding of Steel-Aluminum Adapters"

Moscow, Svarochnoye Proizvodstvo, No 10, Oct 70, pp 19-20

Abstract: A study was made of the possibility of direct press welding of tubular parts of Kh18N10T steel and AMg6 aluminum alloy to produce adapters with wall thicknesses of 6-8 mm, to withstand heating of 450-480°C and cooling in liquid nitrogen. Study of the flow of the metal and welding during joint deformation of the steel and aluminum showed that the principal parameters of welding are the increase in the end area during upsetting of the steel or alloy, the relative overhang of the steel or alloy, and the force of the press. With constant wall thickness of the adapter, these parameters are independent of diameter, since the metal flows only in the radial direction. The properties and structures of a butt joint and bi-metallic sheet are similar. Circular adapters retain vacuum tightness and strength in liquid nitrogen after welding of their ends to steel and AMg6 alloy.

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Power

USSR

UDC [621.362:538.4]-16:669-404.001.4

ALAD'YEV, I. T., MUKHIN, V. A., STRIZHAK, V. Ye., TEFLOV, S. V.,  
TOLMACH, I. M.

"Experimental Study of a DC MHD Machine With Sectionalized Electrodes"

Magnitn. gidrodinamika (Magnetohydrodynamics), 1971, No 1, pp 64-72  
(from RZh-Elektrotekhnika i Energetika, No 9, Sep 71, Abstract No 9A98)

Translation: A working model of a DC MHD machine with sectionalized electrodes is made and experimentally studied on a potassium loop to check the theory and procedure of calculating MHD devices of this type. The study was done for pump and generator operating modes. The following characteristics were obtained in one of the pumping modes: molten potassium temperature 160°C, voltage applied across the channel 1.1 V, developed head 4.05 atmospheres, flow rate 0.15 kg/s, efficiency 7%. The following characteristics were obtained in one of the generator modes: potassium temperature 255°C, voltage across the load 0.4 V, load current 50 A, flow rate 0.356 kg/s, pressure drop 7.2 atmospheres, efficiency 6.2%. The method of calculation is outlined. An advantage

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USSR

ALAD'YEV, I. T. et al., Magnitn. gidrodinamika, 1971, No 1, pp 64-72

of the proposed scheme is the possibility of an appreciable increase in working voltage and reduction in current as compared with traditional circuits. For instance in the anticipated intense pumping mode of the working model, the following indices may be achieved: voltage across the terminals 5 V, developed pressure drop 25 atmospheres, potassium flow rate 0.75 kg/s, efficiency 11%. The proposed scheme with section-alized electrodes is used for high-pressure pumps with relatively low flow rates. Eight illustrations, bibliography of four titles.

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USSR

TER-MKHITAROV, M. S., Candidate of Technical Sciences, Docent, and MUKHIN, V. D.,  
Perm' Polytechnic Institute

"Laboratory Work Using Computers"

Moscow, Vestnik Vysshey Shkoly, No 10, Oct 70, pp 39-40

Abstract: The course "Principles of Computer Technology" at Perm' Polytechnic Institute employs a cycle of laboratory sessions in which students become acquainted with the designs of individual calculating devices and acquire skill in using series computers. The technical center for these sessions is the laboratory of the Chair of Computer Technology, which is equipped with a "Minsk-1" digital computer and MN-7, MPT-9-3, EMU-8, EMU-10 analog machines. The choice of subject for the analog machines varies according to the students' specialization. As a rule, the students have no trouble with the analog machines, but do with the digital computer. Therefore, the chair designed a series of laboratory stands for the exercises in digital computer technology. One of the stands is a table design, fed by three-phase voltage. A base of series logic elements of the "Mir-1" system is used, supplemented with auxiliary elements. There are no connections in the stand except for the power

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USSR

TER-MKHITAROV, M. S., and MUKHIN, V. D., Vestnik Vysshey Shkoly, No 10, Oct 70, pp 39-40

circuits, with all inputs and outputs brought out to a patchboard. The stand includes 86 logic elements, including AND-OR-NOT, 3- and 4-input AND, 3-input OR, AND (pulse-potential), delay elements (univibrators), YES elements (power amplifiers), binary signaling elements, and binary code transmitters.

The subjects developed for the laboratory sessions in digital computer technology were designed to give the students practical experience in the design and study of logic circuits, digital computing circuits, and computer components. The cycle of laboratory sessions culminates with teaching the students to work directly with a "Minsk-1." Students majoring in "Automation and Telemechanics" are given 14 hours for this, with at least two hours to be spent at the console.

2/2

USSR

UDC: 621.396.6-181.5(088.8)

MUKHIN, V. G., POSPELOV, V. M., POLYANTSEV, S. I.

"A Flux"

USSR Author's Certificate No 270850, filed 26 Feb 69, published 18 Aug 70  
(from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1V174 P)

Translation: A flux based on organic acids is proposed for tinning the elements of micromodules. For complete removal of the flux residue from the surface of the micromodule, the acids are used in a glycerin solution in the following percentage weight ratios: glycerin 58-97, organic acid 3-42.

1/1

- 93 -

USSR

UDC: 621.372.061

MUKHIN, V. P., KARMANOV, V. G.

"Investigating the Characteristics of the Electricity-Heat Contour"

V sb. Poluprovodn. pribory i ikh primeneniye (Semiconductor Instruments and Their Applications--collection of works) No. 24, Moscow, "Sov. radio" 1970, pp 214-225 (from RZh-Radiotekhnika, No. 3, March 71, Abstract No. 3A138)

Translation: The characteristics of the electricity-heat contour are analyzed with a thermistor on the basis of the linear method. Five illustrations, bibliography of nine. Resume

1/1

USSR

UDC: 621.372.061

MUKHIN, V. P.

"Schematic Diagram and Phase Properties of Circuits With Negative Differential Resistance"

V sb. Poluprovodn. pribory v tekhn. elektrosvyazi (Semiconductor Devices in Technical Electrical Communications--collection of works), Moscow, "Svyaz'", 1970, pp 158-166 (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1A129)

Translation: The author considers the properties of an electric circuit which includes resistance  $R$  and a nonlinear thermistor with impedance  $Z(i\omega)$ . The expression for the phase response  $\phi(\omega)$  of the system is analyzed. It is shown that the circuit  $R_T R$  has a complex internal feedback structure. Conditions under which the circuit has inductance and "negative" capacitance properties are considered. Five illustrations, bibliography of two titles. Resumé.

1/1

Superalloy

USSR

UDC 621.9.015.74:669.018.25.004.6

MAKAROV, A. D., MUKHIN, V. S., and VORONIN, N. V.

"Hard-Alloy Tool Wear in the Cutting of Heat-Resistant Alloys"

Moscow, Stanki i Instrument, No 2, Feb 74, pp 26-28

Abstract: Results of investigating the microstructure, microhardness, and chemical composition of the tool material (alloy VK6M) in the zone of chamber wear on the trailing surface are presented using as an example the EP220 Ni-Cr-Co alloy. These studies showed that distribution of cobalt from the alloy being machine and tungsten from the cutting tool vary with cutting speed and time of contact of the tool against the machined part due to diffusion from adhesion contact. Low-speed cutting causes tool wear due to the forces of adhesion which tear and carry particles off from the hard alloy that were weakened by fatigue phenomena. Here the zone of greatest wear was located at some distance from the cutting edge. High-speed cutting also causes tool wear due to mutual diffusion dissolution of the tool and machined materials. The lowering of tool wear intensity with increased cutting speed up to an optimum value  $v_0$  can be explained by the decrease of

1/2



USSR

MAKAROV, A. D., et al., Stanki i Instrument, No 2, Feb 74, pp 26-28

adhesion and fatigue phenomena, and the increased intensity of wear at  $v > v_0$  was caused by the amplification of mutual diffusion dissolving of the tool and machine materials. Six figures, seven bibliographic references.

2/2

- 69 -

USSR

UDC 539.4

MUKHIN, V. S., and SAVATEYEV, V. G., Ufa Aviation Institute imeni Sergo Ordzhonikidze

"Relaxation Stability of Residual Stresses in 13Kh12NVMFA Steel"

Kiev, Problemy Prochnosti, No 5, May 73, pp 88-91

Abstract: On the basis of experimental investigation and statistical processing of data, a mathematical model of the relaxation process of residual stresses was derived which takes into account the magnitude of initial technological stresses and exploitation conditions (time, temperature, static working stresses). The derived rules make it possible to evaluate the required magnitude of primary technological stresses or, by known initial technological stresses, to determine the actual value of residual stresses of the part in operation. The residual stresses in parts of 13Kh12NVMFA steel retain sufficient stability up to 250-300°C. Below these temperatures, an effective rise of strength characteristics of parts is possible at the expense of application of favorable compressing residual stresses. One figure, two tables, five bibliographic references.

1/1

MUKHIN, Ye. N.

UNCLASSIFIED

SECTION V

501 SELECTED AEROSPACE RESEARCH

Name: Institute of Photosynthesis, Pushchino

Description:

PC5-89  
June 71

(U) During this quarterly reporting period, one new article was located from the Institute of Photosynthesis in Pushchino. On the basis of this 1970 article on plant growth, it was possible to associate three new persons with the Institute: S. G. Khruslova, V. L. Shmelova, and Ye. F. Yagorova (3-). To the present time it has not been possible to identify very many persons with the Institute; however, the complete listing of staff members identified to date is given below:

All\*List of ProfosyWNikis

|                                |                             |
|--------------------------------|-----------------------------|
| <u>Akulova, Ye. A.</u>         | <u>Prokhorova, L. I.</u>    |
| <u>Gavrilova, V. A.</u>        | <u>Sedovnikova, N. D.</u>   |
| <u>Khruslova, S. G.</u>        | <u>Shmelova, V. L.</u>      |
| <u>Lebedev, A. I.</u>          | <u>Sidorov, A. N.</u>       |
| <u>Makarov, A. D.</u>          | <u>Stashov, L. F.</u>       |
| <u>Mol'yan, A. N.</u>          | <u>Stolovitskiy, Yu. N.</u> |
| <u>Mukhin, Ye. N.</u>          | <u>Surovlev, V. I.</u>      |
| <u>Olovyanishnikova, G. D.</u> | <u>Yagorova, Ye. F.</u>     |
| <u>Popova, N. B.</u>           | <u>Yevlinskaya, V. B.</u>   |

1 INICI ACCIEN

11

USSR

UDC 541.144.7

DOMAN, N. G. and MUKHIN, Ye. N.

"Some Urgent Aspects of Photosynthesis: All Union Symposium on the Biochemistry and Biophysics of Photosynthesis, Irkutsk, 1970"

Moscow, Prikladnaya Biokhimiya i Mikrobiologiya, No 5, 1971, pp 609-611

Abstract: Some 50 papers were presented at the conference by scientists representing every research organization concerned with photosynthesis in the Soviet Union, including those newly established in the eastern part of the country, and several socialist countries. Among the topics discussed were electron transfer in the photosynthesis of bacteria and higher plants; interaction of pigments in plastids of *Chlorella* mutants; spectral properties of chloroplast fragments treated with galactolipase; degradation and regeneration of plastids and pigments in plants exposed to adverse environmental factors such as absence of light and low temperatures; relationships between chloroplasts and mitochondria; carbon metabolism during photosynthesis; capacity of photosynthesizing bacteria for autotrophic and heterotrophic development; metabolism of several exogenous labeled organic acids in plants; postphotosynthetic transformations of carbon in soy after exposure to various favorable and unfavorable factors; regulation of photosynthesis at different levels; biochemical regulation and genetic controlling

1/2

USSR

DOMAN, N. G. and MUKHIN, Ye. N., Prikladnaya Biokhimiya i Mikrobiologiya, No 5, 1971, pp 609-611

systems of photosynthesis; glutamine synthesis in wheat leaves; physiologic aspects of photosynthesis and methods of increasing plant productivity; and physiologic and genetic factors optimizing photosynthesis.

2/2

USSR

UDC 621.771.001.5

OSADCHYI, V. Ya., MUKHEN, Yu. A., and GETIYA, I. G., All-Union Correspondence  
Machine Building Institute

"Determining the Metal Twisting in Spiral Rolling"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy -- Chernaya Metallurgiya, No 9,  
1970, pp 79-82

Abstract: Theoretical and experimental investigations of metal twisting in spiral rolling on a mushroom-shaped broaching tool are reported. A formula for determining the angle of twist was derived. The angle of twist was experimentally determined by twisting preliminarily machined grooves along the generatrix. The experimental results agreed well with those obtained from the formula.

USSR

UDC: 621.396.677(088.8)

MUKHIN, Yu. V.

"A Device for Rotating an Antenna"

USSR Author's Certificate No 274168, filed 25 Dec 68, published 1 Oct 70  
(from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6B110 P)

Translation: The proposed device is equipped with a three-dimensional parallelogram mechanism which is connected to the drive motors for the angle of elevation and azimuth and kinematically coupled to the antenna reflector and gyroscopic elements. To simplify design of the device and improve its operational reliability, the parallelogram mechanism is made in the form of parallel tie rods hinged to the reflector and to the frames of a single or double universal joint whose stationary axles lie along the longitudinal axis of the housing of the device. The gyroscopic elements are fastened on the frame of the suspension, which is coupled to the drive motors for the angle of elevation and azimuth.

1/1

1/2 G15 UNCLASSIFIED  
TITLE--GRANULAR AMMONIUM NITRATE -U-

PROCESSING DATE--27NOV70

AUTHOR--(05)-SHAKHOVA, N.A., AKSELROD, L.S., ~~MUKHINA, A.N.~~, SHELHASHENKO,  
G.V., POLYAKOV, N.N.  
COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 264,370  
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970, 47(9)  
DATE PUBLISHED--03MAR70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--AMMONIUM NITRATE, CHEMICAL PATENT, CRYSTAL, FLUIDIZED BED

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--3001/1453

STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0126984

UNCLASSIFIED



2/2 015

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AA0126984

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. POROUS NH SUB4 NO SUB3 CRYSTALS  
ARE PREPD. BY DELIVERING AN 80-5PERCENT CONCD. NH SUB4 NO SUB3 SOLN.  
INTO A FLUIDIZED BED AT 85-95DEGREES.

UNCLASSIFIED

USSR

UDC 582.26

VERZILIN, N. N., ANAN'YEVA, T. I., and MUKHINA, K. M.

"The Effect of Protracted Darkness on the Metabolism and Viability of Chlorella Sp. K."

Leningrad, Vestnik Leningradskogo Universiteta, No 21, Biologiya, No 4, 1970, pp 121-129

Abstract: Metabolic shifts in Chlorella sp. K. cultured on a medium deficient in organic nutrients and kept in the dark for a period of two months were studied. Before the beginning of the experiment, algae in suspension were cultured on a mineral medium under luminescent lamps, and continuously aerated by air containing 5% CO<sub>2</sub>. The biomass was then centrifuged, resuspended on a culture medium deprived of KNO<sub>3</sub>, poured into 3-liter conical glass vessels and placed in the dark. The suspension was aerated at the rate of 0.8 l/min. Samples for analysis and determination of the cell content in millions per milliliters, dry matter in grams per liter, and the chemical composition of the biomass were periodically obtained. The data obtained revealed that Chlorella sp. K. cells are highly resistant to dark conditions. Despite the deficiency of organic nutrients

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USSR

VERZILIN, N. N., et al, Vestnik Leningradskogo Universiteta, No 21, Biologiya, No 4, 1970, pp 121-129.

in the medium, viability is maintained through the consumption of carbohydrates in the form of starches. No changes occur in the content of other carbohydrate fractions and lipids, and no decomposition or loss of cells takes place. The algae, when transplanted to normal medium and under normal light conditions develop as rapidly as algae grown under conditions of uninterrupted light.

2/2

USSR

UDC: 621.78:620.18:669.295

KHOREV, A. I., MUKHINA, L. G.

"Heat Treatment and Mechanical Properties of Alloys in the Systems Ti-Al-Fe and Ti-Al-Cr-Fe"

*Metallovedeniye i Termicheskaya Obrabotka Metallov*, No 9, 1973, pp 57-60.

Abstract: The influence of the eutectoid-forming beta-stabilizing elements iron and chromium plus iron (with 3% Al) on the mechanical properties of alloys was studied after various heat-treatment modes. The studies were performed on bars 12 mm in diameter. The alloys contain beta-stabilizing additives in quantities equivalent to a certain quantity of molybdenum: 1% Mo is equivalent to 0.4% Fe or 0.6% Cr. It is shown that satisfactory ductility of the base metal is retained in the annealed state with alloying by up to 8.0% Fe or up to 9% Cr + 6% Fe, in the thermally hardened state -- upon alloying by up to 3.2% Fe or 2.4% Cr + 1.6% Fe. Bars of the alloy with superheated structure retain satisfactory ductility in the annealed state following alloying by up to 4.8% Fe and 3.6% Cr + 2.4% Fe.

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USSR

UDC 620.17:669.295'71'26'28

KHOREV, A. I., GLAZUNOV, S. G., and ~~MUKHINA, L. G.~~

"Mechanical Properties of Alloys of the Ti-Al-Cr and Ti-Al-Cr-Mo System"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 3, 1971, pp 28-34

Abstract: Alloys of the Ti-Al-Cr and Ti-Al-Cr-Mo system with a constant amount of  $\alpha$ -stabilizing element (3% Al) and a variable amount of  $\beta$ -stabilizers (chromium and molybdenum) were investigated. The experimental procedure and test results are discussed. The mechanical properties of the alloys in the annealed and quenched states were plotted for annealing at  $-50^{\circ}\text{C}$  for 1 hour with cooling in air, annealing at  $-100^{\circ}\text{C}$  and cooling in air, water quenching from  $-50^{\circ}\text{C}$ , water quenching from  $-100^{\circ}\text{C}$ , and water quenching from  $+50^{\circ}\text{C}$ . The mechanical properties of the alloys in the thermally hardened state and their sensitivity to superheating were also plotted. It was found that alloys of the Ti-Al-Cr and Ti-Al-Cr-Mo (close to critical concentration) system in the annealed state have high plasticity with strength reaching  $120 \text{ kg/mm}^2$ . Quenching with subsequent aging as a method

1/2

- 41 -

USSR

KHOREV, A. I., et al., Metallovedeniye i Termicheskaya Obrabotka Metallov, No 3, 1971, pp 28-34

of improving strength while retaining satisfactory plasticity can be applied for alloys of the Ti-Al-Cr system containing no more than 3.6% Cr and for all Ti-Al-Cr-Mo alloys containing up to 9% Cr + 15% Mo. The mechanical properties of alloys with superheated structure in the annealed and thermally hardened state were investigated. With equal strength obtained after hardening heat treatment of low-alloy alloys and annealing of high-alloy alloys, the latter retain higher plasticity.

2/2

- 41 -

USSR

UDC 620.17:669.295'71'26'28

KHOREV, A. I., GLAZUNOV, S. G., and MUKHINA, L. G.

"Mechanical Properties of Alloys of the Ti-Al-Cr and Ti-Al-Cr-Mo System"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 3, 1971, pp 28-34

Abstract: Alloys of the Ti-Al-Cr and Ti-Al-Cr-Mo system with a constant amount of  $\alpha$ -stabilizing element (3% Al) and a variable amount of  $\beta$ -stabilizers (chromium and molybdenum) were investigated. The experimental procedure and test results are discussed. The mechanical properties of the alloys in the annealed and quenched states were plotted for annealing at  $-50^{\circ}\text{C}$  for 1 hour with cooling in air, annealing at  $-100^{\circ}\text{C}$  and cooling in air, water quenching from  $-50^{\circ}\text{C}$ , water quenching from  $-100^{\circ}\text{C}$ , and water quenching from  $+50^{\circ}\text{C}$ . The mechanical properties of the alloys in the thermally hardened state and their sensitivity to superheating were also plotted. It was found that alloys of the Ti-Al-Cr and Ti-Al-Cr-Mo (close to critical concentration) system in the annealed state have high plasticity with strength reaching  $120 \text{ kg/mm}^2$ . Quenching with subsequent aging as a method

1/2

USSR

KHOREV, A. I., et al., Metallovedeniye i Termicheskaya Obrabotka Metallov, No 3, 1971, pp 28-34

of improving strength while retaining satisfactory plasticity can be applied for alloys of the Ti-Al-Cr system containing no more than 3.6% Cr and for all Ti-Al-Cr-Mo alloys containing up to 9% Cr + 15% Mo. The mechanical properties of alloys with superheated structure in the annealed and thermally hardened state were investigated. With equal strength obtained after hardening heat treatment of low-alloy alloys and annealing of high-alloy alloys, the latter retain higher plasticity.

2/2



USSR

UDC: 621.375.826

MISEZHNIKOV, G. S., MUKHINA, M. M., and SHTEYNSHLEYGER, V. B.

"Traveling-Wave Maser in the 5-Cm Range With Broad Pass Band"

Moscow, Pribory i Tekhnika Eksperimenta, No. 3, 1971, pp 138-139

Abstract: A traveling-wave maser amplifier can be given a broader pass band by increasing the linear amplification through increasing the group velocity wave delay factor. This article describes such a maser operating in the 5-cm wavelength range. The delay system is of the ctenoid type, with asymmetrical dielectric filling, and the delay factor is 300 in a pass band of 200 MHz. The active material is ruby, with the crystal optical axis at an angle of  $90^\circ$  to the constant magnetic field. The paramagnetic amplification before introduction of the magnetic field detuning at a temperature of 4.2° K is 90 db for a delay system length of 110 mm. A sketch of the delay system is given, and the frequency characteristic of the amplifier with two-stage magnetic field detuning and without introducing magnetic field detuning is plotted. The authors express their gratitude to A. I. Bykovskiy for his assistance with the tests and with tuning the amplifier.

1/1

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Acc. Nr.: AP0029821

Ref. Code: UR 0475

5

PRIMARY SOURCE: Vrachebnoye Delo, 1970, Nr 1, pp 102-105

M

ON THE THERAPEUTIC EFFICIENCY OF ELEUTHEROCOCCUS  
Lyubomudrov, V.Ye.; Basamygina, L.Ya.; Bikezina, V.G.;  
Mukhina, M.S.; Mikhaylova, T.I.; Osadchuk, V.S.;  
Shidlovskiy, Ye.F.; Bondarenko, G.A.; Demkovich, O.A. (Donetsk)

Eleutherococcus improves abnormal pulmonary ventilation, favours normalization of the arterial pressure, positively influences cardiac rhythm and His bundle conduction. It proved rather efficient in the treatment of patients with initial stages of vibration disease. It is promising in the treatment of chronic lead intoxication. The preparation favours more rapid acclimatization of pneumoconiosis involved miners.

It is concluded that eleutherococcus may be recommended for the complex treatment of patients with some professional diseases and more rapid acclimatization of patients to sanatorium conditions.

MX

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REEL/FRAZE  
19681507

USSR

UDC 620.195

TOLSTAYA, M. A., KHVOROSTUKHIN, L. A., LOGVINENKO, V. V., SOLODKINA, V. P.,  
and MUKHINA, M. G., Moscow Aviation Technological Institute

"The Effect of Diamond Smoothing of the Surface of Kh18N9T Steel on its  
Corrosion and Electrochemical Behavior"

Moscow, Zashchita Metallov, Vol 9, No 1, Jan-Feb 73, pp 16-21

Abstract: An experimental study was made of the corrosion and electrochemical behavior of relaxed specimens of 1Kh18N9T steel after processing their surfaces by the diamond smoothing method. To correlate properties of differently processed surfaces of 1Kh18N9T steel, smoothed and burnished specimens were tested together. The corrosion variations of the tested specimens in 3% NaCl and their anodic polarization curves in solutions of NaCl (0.1 and 3%) and H<sub>2</sub>SO<sub>4</sub> are discussed by reference to diagrams. The surface of 1Kh18N9T steel subjected to diamond smoothing was found to possess, in comparison with burnished specimens, a considerably higher anodic polarizability and resistance to general pitting corrosion. A mechanism of this phenomenon is suggested. The experimental data prove conclusively the increased stability of the passive condition of 1Kh18N9T steel in corrosive media after finishing treatment of its surface with a spherical diamond tip. Four figures, one table, eighteen bibliographic references.

1/1

- 15 -

1/2 015 UNCLASSIFIED PROCESSING DATE--16OCT70  
TITLE--DETERMINATION OF BETA SITOSTEROL IN VEGETABLE RAW MATERIAL -U-  
AUTHOR--(05)-KSENOFONTOVA, YE.V., MUKHINA, M.V., KHALETSKIY, A.M.,  
KAGANOVICH, F.L., BELKEVICH, P.I.  
COUNTRY OF INFO--USSR  
SOURCE--VESTSI AKAD. NAVUK BELARUS. SSSR, SER. KHIM. NAVUK 1970, (1),  
103-5  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--STEROL, PROCESSED PLANT PRODUCT, SOLVENT EXTRACTION, CHEMICAL  
PURIFICATION, SPECTROPHOTOMETRY  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1997/0190 STEP NO--UR/0419/70/000/001/0103/0105  
CIRC ACCESSION NO--AP0119186  
UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0119186

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DISSOLVE PHYTOSTEROL (0.03 G) IN CH SUB2 CL SUB2 AND APPLY ON THE STARTING LINE OF A LAYER OF UNBOUND AL SUB2 O SUB3. DEVELOP WITH ETO SUB2 AND LOCATE THE BETA SITOSTEROL IN UV LIGHT. ELUTE IT FROM THE POWDER WITH HOT ME SUB2 CO. EVAPORATE ME SUB2 CO AND DISSOLVE RESIDUE IN 25 ML ACOH. TO 5 ML ADD 2 ML 0.5PERCENT BENZOYL PEROXIDE AND BOIL 3-5 MIN. AFTER COOLING, CAREFULLY ADD 0.5 ML CONCD. H SUB2 SO SUB4 AND DIL. TO 25 ML WITH ACOH. MEASURE ABSORBANCE AT 690 MMU OR WITH A RED FILTER. THE LINEAR RANGE IS 0-280 MUG PER ML. THE METHOD IS USED TO ANALYZE UNSAPONIFIABLE ROSINS FROM PEAT WAXES.

FACILITY: LENINGRAD. KHIM.-FARM. INST., LENINGRAD, USSR.

UNCLASSIFIED

USSR

UDC 615.21+615.22]:547.785.5].012.1

PECHENINA, V. M., ~~MIKHINA, N. A.~~, ABATUROVA, K. A., GREENSHCHIKOVA, L. P.,  
MIKHAYLOVA, T. V., KURILENKO, V. M., and GILEV, A. P., Novokuznetsk Scientific  
Chemical-Pharmaceutical Research Institute

"Synthesis and Investigation of Some Benzimidazole Derivatives. V. Esters and  
Ethers of 1-Hydroxymethyl- and 1-(2-Hydroxyethyl)-benzimidazoles"

Moscow, Khimiko-Farmatsevticheskiy Zhurnal, Vol 5, No 10, Oct 71, pp 13-15

Abstract: To anaalkoxide obtained from 0.04 g-atom of metallic Na and corres-  
ponding alcohol, 0.02 mole of 1-chloromethylbenzimidazole hydrochloride is added  
with stirring, the mixture is left standing for several hours, the precipitate  
is removed by filtration, the filtrate is evaporated, and the oily residue is  
dissolved in ethanol. Upon addition of an alcoholic acid solution the respective  
salts of 1-hydroxymethylbenzimidazole ether is precipitated. To obtain esters  
of 1-(2-hydroxyethyl)benzimidazole, a previously described method was used.  
The compounds are moderately toxic, affecting slightly the central nervous sys-  
tem, lowering rectal temperature, and disturbed coordination in some animals.  
Specific physiological effects of select representatives are reported, but no  
general trend is noticeable.

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1/2 012 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--ACID BASE PROPERTIES OF SOME AZO DERIVATIVES OF SALICYLIC AND ALPHA  
HYDROXYNAPHTHOIC ACIDS -U-  
AUTHOR-(03)-MUKHINA, N.A., TETENCHUK, K.P., KAGANSKIY, M.M.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. VSES. KHIM. OBSHCHEST. 1970, 15(3), 351-2  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--AZO COMPOUND, SPECTROPHOTOMETRIC ANALYSIS, HYDROGEN ION  
CONCENTRATION, NITROGEN, BENZENE DERIVATIVE, HYDROXYL RADICAL, ACID BASE  
COMPLEX  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY FICHE NO----FD70/605012/C05 STEP NO--UR/0063/70/015/003/0351/0352  
CIRC ACCESSION NO--AP0140267

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--04DEC70

2/2 012

CIRC ACCESSION NO--AP0140267

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FOLLOWING VALUES OF PKA(OH) AND PKA(CO SUB2 H), RESP., WERE CALCD. FROM SPECTROPHOTOMETRY IN AQ. SOLNS. OF THE FOLLOWING SHOWN ON MICROFICHE. FROM CORRELATION OF THESE WITH THE HAMMETT EQUATION THE ACIDITY OF COMPS. OF THE 1ST GROUP IS ONLY APPROX. FITTED TO THE HAMMETT EQUATION FOR THE PHENOLIC DISSOCN. THE TRANSMISSION COEFF. OF THE N SUB2 GROUP IS LOW: 0.14. INTRODUCTION OF STRONGLY POLAR GROUPS IMPROVES THE HAMMETT EQUATION CORRELATION, INDICATING A DIRECT POLAR INTERACTION BETWEEN THESE GROUPS AND THE REACTIVE CENTER. COMPS. IN THE 2ND GROUP CAN BE ADEQUATELY FITTED INTO THE HAMMET EQUATION, BUT LACK OF DATA ON PKA VALUES OF HYDROXYNAPHTHOIC ACIDS MADE IMPOSSIBLE A CALCN. OF THE TRANSMISSION COEFF. OF N SUB2 IN THIS GROUP. FACILITY: NOVOKUZNETSK. NAUCH.-ISSLED. KHIM. FARM. INST., NOVOKUZNETSK, USSR.

UNCLASSIFIED



USSR

UDC 669.14

STREKALOVSKIY, M. M., SMIRNOV, Ya. D., CHERNOV, G. I., KANISHEL'SON, Ya. Ya.,  
KHOLODOV, Ya. A., STARIKOVA, A. P., PUKHINA, P. P., and MALYGIN, Yu. D.

"Improvement of Technology and Quality of the 18Kh2N4VA Structural Steel as  
the Result of Vacuum Tapping"

Moscow, V sb. "Sovremennyye problemy kachestva stali" (MISIS) (Collection of  
Works. Modern Problems of Steel Quality) (Moscow Institute of Steel and  
Alloys), Izd-vo "Metallurgiya," No 61, 1970, pp 241-242

Translation of Abstract: An installation is described which ensures metal  
tapping under vacuum. The results of an investigation of some technological  
alternatives for melting and treatment of the 18Kh2N4VA steel are given.

1/1

1/2 023 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--THERMODYNAMIC CHARACTERISTICS OF THE FORMATION OF A CADMIUM  
MONIODIDE COMPLEX IN WATER METHANOL MIXTURES -U-  
AUTHOR--(02)-VASILYEV, V.P., MUKHINA, P.S. M  
COUNTRY OF INFO--USSR  
SOURCE--IZV. VYSSH. UCHEB. ZAVED., KHIM. KHIM. TEKHNOL. 1970, 13(3), 352-3  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--THERMODYNAMIC CHARACTERISTIC, CADMIUM COMPLEX, IODIDE, IONIC  
BONDING, ENTROPY  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3008/0849 STEP NO--UR/0153/70/013/003/0352/0353  
CIRC ACCESSION NO--AT0137877  
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--27NOV70

2/2 023

CIRC ACCESSION NO--AT0137877

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE NEG. HEAT OF MIXING (NEGATIVE

DELAT II) OF H SUB2 O, MEQH SOLNS. OF COING SUB3) SUB2 AND KI AT 0.3

IONIC STRENGTH AND 25DEGREES IS APPROX. CONST. AT 1.70-1.74 KCAL-MOLE AT

10-30 WT. PERCENT MEQH, DECREASES SHARPLY TO 0.64 AT 75 WT. PERCENT

MEQH, AND RISES TO 3.13 AT 98 WT. PERCENT MEQH. SIMILAR DATA ARE GIVEN

FOR HEATS OF FORMATION AND DILN. OF THE CDL COMPLEX. THE ENTROPY

CHANGE INCREASES FROM 0 TO A MAX. OF 15.8 EU AT 90 WT. PERCENT MEQH.

THE BEHAVIOR OF THE SYSTEM CLOSELY RESEMBLES THAT OF THE CLD COMPLEX IN

H SUB2 O, ETOH MIXTS., ALTHOUGH THE LATTER MIXT. EVIDENCE A GREATER

DESTRUCTIVE ACTION THAN THE MEQH MIXT. ON THE PRIMARY H SUB2 O

STRUCTURE. FACILITY: IVANOV. KHIM. TEKHNOL. INST., IVANOVO,

USSR.

UNCLASSIFIED

1/2 010 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--USE OF NOMOGRAMS TO DESCRIBE PYROLYSIS PROCESSES -U-  
AUTHOR--(021)-MAYOROV, V.I., MUKHINA, T.N. m  
COUNTRY OF INFO--USSR  
SOURCE--NEFTEPERERAB. NEFTKHIM. (MOSCOW) 1970, (3), 19-22  
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, PROPULSION AND FUELS

TOPIC TAGS--NOMOGRAPH, PYROLYSIS, ETHANE, PROPANE, BUTANE, GASOLINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--2000/2049

STEP NO--UR/0318/70/000/003/0019/0022

CIRC ACCESSION NO--AP0125637

UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125637

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN ATTEMPT WAS MADE TO SYSTEMATIZE EXPTL. DATA ON HYDROCARBON PYROLYSIS BY COMPARING NOMOGRAMS DEPICTING PYROLYSIS YIELDS FROM C SUB2 H SUB6, C SUB3 H SUB8, N,C SUB4 H SUB10, ISO,C SUB4 H SUB10 AND STRAIGHT DISTN., PLATFORMING, AND HYDROFORMING GASOLINES AS FUNCTIONS OF TEMP., CONTACT TIME, AND STEAM DILN. EXAMPLES SHOW THE USE OF SPECIAL NOMOGRAMS FOR CASES IN WHICH THE STEAM WAS HEATED BY THE OUTFLOWING PYROLYSIS GAS AND WHERE IT WAS PRODUCED BY COMBUSTION OF H.

UNCLASSIFIED

USSR

UDC 621.373.521.1

KOZYREV, V. B., KUSHINA, T. V.

"Load Characteristics of a Single-Cycle Keying Oscillator"

Tr. Mosk. elektrotekh. in-ta svyazi (Works of the Moscow Institute of Electrical Communications Engineering), 1970, vyp., pp 84-89 (from RZh-Radiotekhnika, No 10, Oct 70, Abstract No 10D380)

[No abstract]

USSR

UDC: 681.3.06:51

GANEYEV, D. G., GIGLAVYY, A. V., KANDALOVA, N. S., MURTAZI, R. F., MUKHINA, V. N., NEPOCHATYKH, D. P., SURINOVA, R. V.

"An Operational System Oriented for Use in the ASUP Management Systems for ASVT Computer Systems Models"

Tr. N.-i. i proyekt. in-ta po vnedreniyu vychisl. tekhn. v nar. kh-vo  
(Works of the Scientific Research and Design Institute on Introducing Computer Technology Into the National Economy), 1970, vyp. 5, pp 36-44 (from RZh-Kibernetika, No 11, Nov 71, Abstract No 11V837)

Translation: The paper describes the fundamental principles which lie at the base of development of a small operational system designed for use in the development and operation of ASUP automated systems for management of enterprises with production of discrete type based on an aggregated system of computer facilities (ASVT). An ASVT mnemocode with a set of macro-commands is used as the programming language in the proposed operational system. The principal functions, make-up and working singularities of the operational system are presented. V. Mikheyev.

1/1

- 48 -

Acc. Nr:

**A 0036432**

Ref. Code: UR 0213

PRIMARY SOURCE: Okeanologiya, 1970, Vol 10, Nr 1, pp 86-98

Yu. A. BOGDANOV, O. G. KOZLOVA, Y. V. MUKHRINA

**DISTRIBUTION AND COMPOSITION OF SUSPENDED MATTER IN THE  
NORTHERN AND CENTRAL INDIAN OCEAN**

**Summary**

Some results are presented of the studies of suspended matter collected with the aid of separation and membrane filtration from the ocean surface and from different ocean depths. The distribution of suspended matter in the surface water is irregular. Its maximum amounts are confined to the near-shore areas, while in the central open parts of the ocean, to the areas of the rich development of planktonic organisms. Two types of the distribution of suspended matter in depth have been established depending on its material composition.

Different components of suspended material, siliceous, carbonate and terrigenous, are characterized and their distribution and role in the accumulation of sediments are determined.

D. A.

12

REEL/FRAME

19721276



AA0040689

UR 0482

*m*  
Soviet Inventions Illustrated, Section I Chemical, Derwent, *1-70*

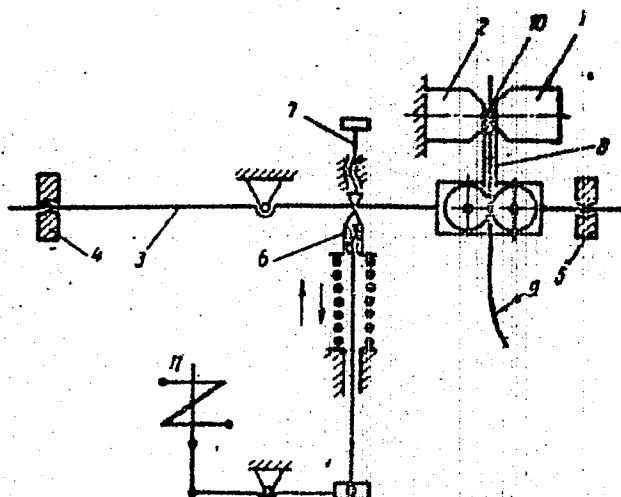
241957 CONTACT SOLDERING MECHANISM has solder feed control comprising a double-arm lever (3), with weights (4,5). Tube (8) for solder (9) feed is attached to the lever. The component for soldering (10) is placed between the electrodes (1,2), heat applied, and the lever is pulled down by electromagnet (11), tearing off the required amount of solder.

*2*  
AUTHORS: Litsis, A. E., Rudzit, R. B.; Moskvin, E. G.; and  
Mukhin, A. I.,  
Rizhskiy Politekhnikheskiy Institut

*18*

19750303

AA0040689



30.10.67 as 1194057/25-27. A.E.LITSIS et alia.RIGA  
POLYTECHNIC (28.8.69) Bul 14/18.4.69. Class 49h.  
Int.Cl.B 23k.

19750304

USSR

UDC: 532.516.2

MUKHITARYAN, A. M., MOVCHAN, V. T., PEREVERZEV, A. M.

"A Semibounded Turbulent Jet on a Thin Axisymmetric Body"

Sb. nauch. tr. Kiyev. in-t inzh. grazhd. aviatsii (Collected Scientific Works of the Kiev Institute of Civil Aviation Engineers), 1970, vyp. 6, pp 3-8 (from RZh-Mekhanika, No 7, Jul 71, Abstract No 7B704)

Translation: A method is outlined for calculating the velocity profiles in the main section of an axisymmetric semibounded jet. For this purpose, the authors use the Kolmogorov-Prandtl formula which establishes a relationship between turbulent tangential stress, the kinetic energy of turbulence, and the gradient of the averaged velocity. In calculating the velocities in the part of the jet near the wall, the distribution of turbulent energy is approximated by a first-degree polynomial, while the tangential stress is approximated by a third-degree polynomial of the transverse coordinate. In the external (jet) part, the turbulent energy is assumed to be independent of the transverse coordinate, and a third-degree polynomial is substituted for the tangential stress profile. The coefficients of the polynomials are determined from the boundary conditions on the wall, on the line of maximum velocities and on the outer boundary

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MUKHITARYAN, A. M. et al., Sb. nauchn. tr. Kiyev. in-t inzh. grazhd. aviatsii, 1970, vyp. 6, pp 3-8

of the jet. For a special case (boundary layer on a flat plate with zero pressure gradients), the theoretical profile of the velocity defect is compared with the experimental data of Freeman, Kolebanov and Deal, Schultz-Grunov. Some considerations are given on the development of such jets along a body. A. V. Kolesnikov.

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- 26 -

USSR

MUMINOV, A. I., ESHKABYLOV, T. D., and MUKHITDINOV, A. G., Chair of Pathological Anatomy and Otorhinolaryngological Diseases, Samarkand Medical Institute

"Toxicological Characteristics of Sevin"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 5, 1971, pp 18-20

Abstract: All but 1 out of 18 rabbits chronically poisoned with sevin (5 mg/kg) for 6 months survived. During this time their general condition remained good and the hematological indexes were within normal limits. Alanine-transaminase and aldolase activities following an initial increase dropped to near-normal levels by the end of the experiment. In another series of experiments, 11 out of 18 rabbits given much larger doses of sevin (50 mg/kg) died within 94 to 179 days. These animals ate poorly, lost weight, and showed various symptoms of poisoning. The hematological indexes were abnormal and aldolase-transaminase and aldolase activities increased considerably, peaking at day 80 and decreasing slowly thereafter. Pathological examination of the animals of both groups revealed vague degenerative changes in the liver, myocardium, kidneys, lungs, and ears of those that received 5 mg/kg of sevin and much more pronounced changes in the parenchymatous organs of animals poisoned with the larger dose.

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Hydraulic and Pneumatic

USSR

LEVSH, I. P., HIYAZOV, M. I., UBAYDULLAEV, A. K., MISHINA, V. N., MUKHITDINOV, KH. KH.

"Mass Transfer and Hydrodynamics in 3-phase Fluidized Bed Using Various Fillers"

Gidrodinamika, Teplo- i Massoobmin v Psevdozhizh. Sloye [Hydrodynamics, Heat and Mass Transfer in Fluidized Bed], Ivanovo, 1971, pp 202-207. (Translated from Referativnyy Zhurnal Mekhanika, No 1, 1972, Abstract No 1B1121, by V. A. Kernerman).

Translation: Studies involving fluidization of sprinkled packing (plastic rings, hollow balls and cubes) in three gas-liquid systems on grid plates and overflow plates in apparatus 145 to 300 m in diameter have shown that in the initial period of fluidization of the filler in the 3-phase layer, 10-15 times greater phase contact surface is created than in a bubbling layer without filler. Movement of the filler and pulsating fluid drain through the holes in the plates facilitate intensive renewal of the phase contact surface and increased mass transfer rates. Data are presented on the influence of gas flow rate and sprinkling density on bed resistance and dynamic layer height, as well as the observed values of mass transfer coefficients and the contact surface between phases calculated according to the method suggested. 15 biblio refs.

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1/2 030 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--DESORPTION OF CARBON DIOXIDE FROM MONOETHANOLAMINE SOLUTIONS IN A  
COLUMN PACKED WITH POLYPROPYLENE RINGS -U-  
AUTHOR--(103)--MUKHITDINOV, KH.KH., LEVSH, I.P., ABDURASHIDOV, T.R.  
COUNTRY OF INFO--USSR  
SOURCE--UZB. KHIM. ZH. 1970, 14(2), 81-3  
DATE PUBLISHED--70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--DESORPTION, CARBON DIOXIDE, MONOETHANOLAMINE, POLYPROPYLENE,  
FLUID FLOW  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--2000/1609 STEP NO--UR/0291/70/014/002/0081/0083  
CIRC ACCESSION NO--AP0125231  
UNCLASSIFIED

2/2 030

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125231  
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE REPLACEMENT OF CERAMIC (A)

PACKINGS WITH MORE STABLE POLYPROPYLENE (B) RING PACKINGS WAS  
INVESTIGATED IN THE DESORPTION OF CO SUB2 FROM MONOETHANOLAMINE (I)  
SOLNS. DESORPTION EFFICIENCIES ARE COMPARED FOR DIFFERENT SIZE A AND B  
PACKINGS DETD. AT LIQ. FLOW RATES OF 5-40 M PRIME3-M PRIME2 HR ON SOLNS.  
CONTG. 60-70 G CO SUB2-L. HIGHEST DESCRIPTION (59PERCENT) EFFICIENCIES  
WERE OBTAINED ON 15 TIMES 15 TIMES 2 MM A AND B RINGS AT 116 AND  
118DEGREES, RESP. CO SUB2 DESORPTION IN A GIVEN COLUMN WAS DOUBLED AT  
HIGH LIQ. FLOW RATES BY FLOATING (FLUIDIZING) THE B RINGS IN I WITH A  
VAPORGAS MIXT. THE HYDRODYNAMICS OF THE FLOATING RINGS WERE POOR AND  
THEREFORE NOT SUITABLE FOR SUCH AN OPERATION. FACILITY:  
TASHKENT. POLITEKH. INST., TASHKENT, USSR.

UNCLASSIFIED



USSR

UDC:622.243.144.2

MUKHITDINOV, K. M., TURAPOV, M. K., IZUMRUDOVA, T. V.

"New Washing Solutions for Drilling Deep Wells Under Difficult Geological Conditions"

Tashkent, Uzbekskiy Geologicheskii Zhurnal, No. 6, 1970, pp. 11-14

Abstract: Various difficulties arise in the drilling of oil and gas wells in Uzbekistan, depending on the age, lithology and structure of the deposits. Although the assortment of chemical diluting agents is rather great, a need is still felt for an agent which can meet the demands for chemical activity without excessive foam formation. The authors have produced three new types of nitrated sulfite-alcohol-wash agents, found to be superior to both untreated and condensed agents of the same type used earlier. The optimal concentration of the new agent to improve the rheological properties of the solution is 2-4 times less than that of agents used earlier, and is independent of the composition of the clay solutions and temperature. The new agent shows particular great improvement in properties under conditions of unusually high stratal pressures.

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USSR

KOLOMIETS, V. G., MUKHITDINOV, T. M.

"Partial Averaging in Nonlinear Systems of Differential Equations with Random Functions"

Analit. i Kachestven. Metody Teorii Differents. Uravneniy [Analytic and Qualitative Methods in the Theory of Differential Equations -- Collection of Works], Kiev, 1972, pp 125-134 (Translated from Referativnyy Zhurnal, Kibernetika, No 3, Moscow, 1973, Abstract No 3 V104 by M. Benderskiy).

Translation: A study is made of the system

$$\begin{cases} \dot{x} = \varepsilon X(t, x, y, \omega) \\ \dot{y} = \varepsilon Y(t, x, y, \omega), \quad x(0) = x_0, \quad y(0) = y_0, \end{cases} \quad (1)$$

where  $x \in \mathbb{R}^m$ ,  $y \in \mathbb{R}^n$ , is a point in the probability space,  $X(Y)$  is an  $m$ -dimensional ( $n$ -dimensional) vector function. It is assumed that for function  $X$ , the strong law of large numbers is fulfilled:

$$\frac{1}{t} \int_0^t X(t, x, y, \omega) dt \rightarrow X_0(x, y) \text{ при } t \rightarrow \infty$$

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KOLOMIETS, V. G., MUKHITDINOV, T. M., Analit. i Kachestven. Metody Teorii Differents. Uravneniy, Kiev, 1972, pp 125-134.

with probability 1. Suppose  $x(t, \omega)$ ,  $y(t, \omega)$  is the solution of (1), while  $\xi(t, \omega)$ ,  $\eta(t, \omega)$  is the solution of the partial averaged system, i. e., a system which is produced by replacement of  $X$  with  $X_0$ . It is proven that for sufficiently small  $\delta > 0$  and any  $L > 0$ , we can indicate an  $\epsilon_0 > 0$  such that where  $0 < \epsilon < \epsilon_0$  in the interval  $0 < t < L\epsilon^{-1}$ , the equation

$$M|x(t, \omega) - \xi(t, \omega)| < \delta, M|y(t, \omega) - \eta(t, \omega)| < \delta, \quad (2)$$

is fulfilled if  $X(t, x, y, \omega)$  and  $Y(t, x, y, \omega)$  are evenly limited and satisfy the Lipshits condition.

If the solution  $\xi(t, \omega)$ ,  $\eta(t, \omega)$  is evenly asymptotically stable, formula (2) obtains with all  $t \geq 0$ .

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USSR

KOLOMIETS, V. G., MUKHITDINOV, T. M.

"Averaging in Systems of Differential Equations with Random Parameters"

Analit. i Kachestven. Metody Teorii Differents. Uravneniy [Analytic and Qualitative Methods in the Theory of Differential Equations -- Collection of Works], Kiev, 1972, pp 118-124 (Translated from Referativnyy Zhurnal, Kibernetika, No 3, Moscow, 1973, Abstract No 3 V103 by M. Benderskiy).

Translation: A study is made of the system

$$\begin{aligned}\dot{x} &= eX(t, x, y, \omega), \\ \dot{y} &= Y(t, x, y, \omega).\end{aligned}\tag{1}$$

where  $x \in R^n$ ,  $y \in R^m$ ,  $\omega \in \Omega$ ,  $\Omega$  is a probability space. Together with this system, a study is made of the degenerate system

$$\dot{y} = Y(t, x, y, \omega), \quad x = \text{const},\tag{2}$$

to which (1) is converted where  $\omega = 0$ . If the solution of system (2)  $y = f(t, x, c, \omega)$ ,  $f(0, x, c, \omega) = c$  is known, then (1) indicates that

$$\frac{dx}{dt} = eX(t, x, f(t, x, c, \omega), \omega) = eF(t, x, c, \omega), \quad x(0) = x_0.$$

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USSR

KOLOMIETS, V. G., MUKHITDINOV, T. M., Analit. i Kachestven. Metody Teorii Differents. Uravneniy, Kiev, 1972, pp 118-124.

$$\frac{dy}{dt} = -e \left( \frac{\partial f}{\partial c} \right)^{-1} \frac{\partial f}{\partial x} \cdot X(t, x, f, \omega) = e Z(t, x, c, \omega), \quad (3)$$

$$c(0) = y_0.$$

In the case when  $F(t, x, c, \omega)$  and  $Z(t, x, c, \omega)$  have even distribution with respect to time with probability 1, the theorem of R. Z. Khas'minskiy on averaging can be applied to analysis of system (3). If only  $F(t, x, c, \omega)$  has an even mean, the authors apply a theorem which they proved earlier concerning partial averaging (see Abstract 3 V104) to analysis of system (3).

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- 11 -

USSR

UDC 661.183.123.2/3:547.1'118

NUKHITDINOVA, B. A., YERGOZHIN, YE. YE., and RAFIKOV, S. R., Institute of Chemical Sciences, Acad. Sc. KazSSR, Institute of Chemistry, Bashkir Branch Acad. Sc. USSR

"Phosphorylated Redox Ionic Exchange Resins"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 4, Apr 72, pp 974-976

Abstract: The starting polymers were obtained by condensation of the halo-methylated copolymers of styrene and divinylbenzene with quinone, naphthoquinone, anthraquinone, hydroquinone, pyrogallol, pyrocatechol, etc. in presence of 1-2%  $ZnCl_2$  in refluxing dioxane. Phosphorylation was carried out with  $PCl_5$  in presence of  $AlCl_3$  at  $70^\circ$  for 8 hrs; then the product was hydrolysed and acidified with 25%  $HNO_3$ . To convert the cation exchange group into the  $H^+$ -form, the material was treated with 10-%  $HCl$ . Two active groups were found by potentiometric titration with dissociation constants  $pK_1$  3.03 and  $pK_2$  6.25. IR spectra showed absorption bands in the area of  $P=O$  for the oxidized form, and C-O-phenols for the reduced forms. The new exchange resins showed good kinetic properties, increased mechanical strength, and chemical and thermal stability.

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1/2 018 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--REACTION OF HALOMETHYLATED COPOLYMERS OF STYRENE AND DIVINYLBENZENE  
WITH QUINONES, DIHYDROXYBENZENES, AND THEIR DIALKYL ESTERS -U-  
AUTHOR-(03)-MUKHITDINOVA, B.A., YERGOZHIN, YE.YE., RAFIKOV, S.R.

COUNTRY OF INFO--USSR

SOURCE--TR. INST. KHIM. NAUK, AKAD. NAUK KAZ. SSR 1970, 28, 73-7

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--HALOGENATED ORGANIC COMPOUND, COPOLYMER, STYRENE, QUINONE,  
HYDROXYL RADICAL, POLYMER CROSSLINKING, THERMAL STABILITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--2000/1102

STEP NO--UR/0000/70/028/000/0073/0077

CIRC ACCESSION NO--AT0124757

UNCLASSIFIED

Z/2 018

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AT0124757

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. HALOMETHYLATED STYRENE  
DIVINYLBENZENE COPOLYMERS (OBTAINED IN THE PRESENCE OF ZNCL SUB2 OR SNCL  
SUB4) WERE CONDENSED WITH QUINONES (I), C SUB6 H SUB4(OH)SUB2, AND  
DERIVS. THEREOF IN DIOXANE OR CLCH SUB2 CH SUB2 CL TO GIVE CROSSLINKED  
COPOLYMERS. THE CONDENSATION RATE AND D. P. WERE INVERSELY PROPORTIONAL  
TO THE CROSSLINK D. THE HIGHEST CONDENSATION RATE WAS OBSD. WITH BROMO  
AND IGDOMETHYLATED COPOLYMERS. COPOLYMERS CONTG. I OR HYDROQUINONE  
EXHIBITED THE HIGHEST THERMAL STABILITY.

UNCLASSIFIED



1/2 018 UNCLASSIFIED PROCESSING DATE--1340V70  
TITLE--SYNTHESIS AND STUDY OF REDOX POLYMERS BASED ON CROSSLINKED  
CHLOROMETHYLATED STYRENE DIVINYLBENZENE COPOLYMERS --U-  
AUTHOR--(03)--YERGOZHIN, YE.YE., RAFIKOV, S.R., MUKHITOINDVA, B.A.  
COUNTRY OF INFO--USSR  
SOURCE--TR. INST. KHIM. NAUK. AKADE. NAUK KAZ. SSR 1970, 28, 62-72  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--POLYMER CROSSLINKING, STYRENE, BUTADIENE, BENZENE, QUINONE,  
RESORCINOL, AMINE DERIVATIVE, HYDROQUINONE, POLYMER STRUCTURE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FKAME--3006/1098 STEP NO--UR/0000/70/028/000/0062/0072  
CIRC ACCESSION NO--AT0134784  
UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AF0134784

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CROSSLINKED CHLOROMETHYLATED  
STYRENE DIVINYLBENZENE COPOLYMERS WERE CONDENSED WITH QUINONE,  
RESORCINOL, PYROGALLOL, CATECHOL, (NH SUB2) SUB2 C:S, ANTHRAQUINONE,  
P, (MEQ) SUB2 C SUB6 H SUB4, AND HYDROQUINONE DIACETATE IN DIOXANE OR  
CLCH SUB2 CH SUB2 CL. THE POLYMERS PREPD. HAD A REDOX CAPACITY OF  
2.0-5.0 MEQ-G. THE STRUCTURE OF THE POLYMERS WAS DETD.

UNCLASSIFIED

1/2 019 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--MACROPOROUS COPOLYMERS WITH REDOX AND ION EXCHANGE PROPERTIES -U-  
AUTHOR--(02)-MUKHITDINOVA, B.A., RAFIKOV, S.R.  
COUNTRY OF INFO--USSR M  
SOURCE--IZV. AKAD. NAUK KAZ. SSR. SER. KHIM. 1970, 20(2), 52-6  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--COPOLYMER, ION EXCHANGE RESIN, POROSITY, AMINATION,  
SULFONATION, CHLORINATED ORGANIC COMPOUND, STYRENE, BUTADIENE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1999/1823 STEP NO--UR/0360/70/020/002/0052/0056  
CIRC ACCESSION NO--AP0123612  
UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0123612

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE COPOLYMER OF STYRENE WITH DIVINYLBENZENE (I) IN ISOCTANE GAVE POROUS RESINS WHICH WERE CONVERTED TO ION EXCHANGE RESINS WITH REDOX PROPERTIES BY REACTION WITH CLCH SUB2 OME FOLLOWED BY TREATMENT WITH QUINONE, HYDROQUINONE, PYROCATACHOL, RESORCINOL, PYROGALLOL, OR RHO, DIMETHOXYBENZENE. THE EXTENT OF CL GROUP REPLACEMENT INCREASED WITH THE RESIN POROSITY, BUT IT DECREASED WITH THE AMT. OF I IN THE COPOLYMER. THE MODIFIED COPOLYMERS WERE FURTHER AMINATED AND SULFONATED TO INCREASE THEIR HYDROPHILIC PROPERTIES. THE FINAL RESINS HAD 1.7-2.6 MEQUIV PER G ANION EXCHANGE CAPACITY, 1.4-2.0 MEQUIV PER G CATION EXCHANGE CAPACITY AND 1.4-3.5 MEQUIV PER G REDOX CAPACITY. FACILITY: INST. KHIM. NAUK, ALMA-ATA, USSR.

UNCLASSIFIED

USSR

UDC 541.183.661.183.12

YERGOSHIN, YE. YE., BAKIROVA, R. KH., MUKHITDINOVA, R. A., RAFIKOV, S. R.,  
Institute of Chemical Sciences of the Academy of Sciences of the Kazakh SSR  
and the Chemistry Institute of the Bashkir Branch of the USSR Academy of  
Sciences

"New Macroporous Electron-Ion Exchangers"

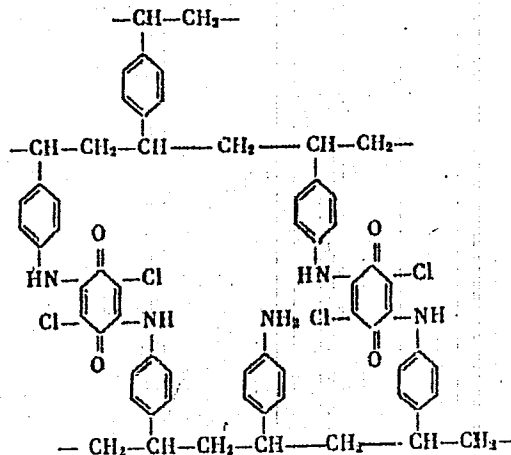
Moscow, Izvestiya Akademii Nauk SSSR - Seriya Khimicheskaya, No 11, 1972,  
pp 2607-2609

Abstract: The known reaction of condensation of aromatic and aliphatic diamines  
with quinone or chloranil leading to the formation of polyaminoquinones  
(A. A. Berlin, et al., USSR Author's Certificate No 129016, 1960; Byul. izobr.,  
No 11, 1960; Izv. AN SSR. Otd khim. n., 2260, 1959; Vysokomolekul. soyed.,  
No 1, 1643, 1959; L. A. Blyumenfel'd, et al., Bysokomolekul. soyed., No 1,  
1647, 1959) with conjugate bonds in the macromolecule chains having increased  
heat resistance, magnetic susceptibility and complex-forming properties is  
used to synthesize new electron-ion exchangers. The macroporous weakly basic  
anion exchange resin Ional ANP was used as the polyamine. The experimental  
procedure and results are described. The structure of the synthesized electron-  
ion exchanger is represented as follows;

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USSR

YERGOSHIN, YE. YE., et al., Izvestiya Akademii Nauk SSSR -- Seriya Khimicheskaya, No 11, 1972, pp 2607-2609



The products of the interaction of Ional ANP with chloranyl for 0.5, 1 and 10 hours contain 16, 90, 15, 20 and 14.93% Cl. This reduction in chlorine in the 2/3

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YERGOSHIN, YE. YE., et al., Izvestiya Akademii Nauk SSSR -- Seriya Khimicheskaya, No 11, 1972, pp 2607-2609

polymer can be explained by partial replacement of it by aceto groups. The formation of additional transverse bonds is confirmed by data from chemical analysis, infrared spectra and a reduction in the swelling of the synthesized redox ion exchange resin in dimethyl formamide.

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USSR

UDC 632.95

KHODZHAYEVA, F. A., GOLOVYASHKINA, L. F., and MUKHITDINOVA, N. A.

"Reaction of the Isomeric Monobromacrylic and  $\alpha, \beta$ -Dibromacrylic Acids with Aniline"

V sb. Sintez vysokomolekul. soyedin., (Collection of Works: High-Molecular Compounds), Tashkent, Fan, 1972, pp 58-62 (from Referativnyy Zhurnal -- Khimiya, Svodnyy Tom, No 23(II), 1972, Abstract No 23N434 by T. A. Belyayeva)

Translation: Anilides and substituted phenyl esters of isomeric monochloracrylic acids possess a high herbicidal and fungicidal activity. In order to synthesize new pesticides with high effectiveness, the reaction of isomeric monobromacrylic and  $\alpha, \beta$ -dibromacrylic acids with aniline was studied. Physical and chemical properties of the obtained anilides of the above acids are given.

1/1



1/2 033 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--COPOLYMERIZATION OF ,EPOXYPROPYL, PYRROLIDINONE WITH ACRYLONITRILE,  
METHYL METHACRYLATE, OR STYRENE -U-  
AUTHOR-(03)-MUXHITDINOVA, N.A., STRATU, Z.A., MARKMAN, T.V.

COUNTRY OF INFO--USSR

SOURCE--UZB. KHIM. ZH. 1970, 14(2), 71-4

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--COPOLYMERIZATION, EPOXY COMPOUND, PYRROLIDINE, KETONE,  
ACRYLONITRILE, STYRENE, METHYL METHACRYLATE, INTRINSIC VISCOSITY, IR  
SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--3008/0921

STEP NO--UR/0291/70/014/002/0071/0074

CIRC ACCESSION NO--AP0137949

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--04DEC70

2/2 033

CIRC ACCESSION NO--AP0137949

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ANIONIC POLYMER OF 1, (2,3,EPOXYPROPYL), 2, PYRROLIDINONE (I) IN THE PRESENCE OF 0.5-2 WT. PERCENT POTASSIUM ALCOHOLATE, METALLIC K OR POTASSIUM PYRROLIDINONE (III) AT 60 DEGREES FOR 50 HR GAVE POLY(1, (2,3,EPOXYPROPYL) PYRROLIDINONE) IN 62-90 PERCENT YIELD, MOL. WT. 1000-3000. COPOLYMERS WITH LACTAM RINGS WERE OBTAINED BY ANIONIC COPOLYMERIZATION AT 60 DEGREES FOR 50 HR OF I WITH ACRYLONITRILE (III), ME METHACRYLATE (IV), OR STYRENE (V) IN THE PRESENCE OF II. N CONTENT, COPOLYMER YIELDS AND THEIR INTRINSIC VISCOSITIES IN C SUB 6 H SUB 6 WERE DETERMINED. COPOLYMERS OF I WITH III WERE SOL. IN ME SUB 2 CO AND THOSE OF I WITH V IN C SUB 6 H SUB 6; THEY WERE INSOL. IN H SUB 2 O. COPOLYMERS OF I WITH IV WERE INSOL. IN H SUB 2 O AND CHCL SUB 3. IR SPECTRA OF THE COPOLYMERS REVEALED THE FORMATION OF ETHER GROUPS IN THE CHAIN AND THE DISAPPEARANCE OF THE EPOXY GROUPS.

FACILITY: INST. KHIM., TASHKENT, USSR.

UNCLASSIFIED

1/2 018 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--STRUCTURE AND INTERFACIAL SURFACE OF DISPERSED GAS, LIQUID AND  
GAS, LIQUID, SOLID SYSTEMS FORMED IN FOAM APPARATUS -U-  
AUTHOR--(041)-YENGIBARYAN, S.N., TARAT, E.YA., MUKHLENOV, I.P., BARTOV, A.T.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(5), 1178-82  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY, MATERIALS  
TOPIC TAGS--CHEMICAL ENGINEERING, COPPER SULFATE, AQUEOUS SOLUTION, PHASE  
ANALYSIS, MODEL, SODIUM HYDROXIDE, FOAM  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3004/0955 STEP NO--UR/0080/70/043/005/1178/1182  
CIRC ACCESSION NO--AP0131540  
UNCLASSIFIED

2/2 G18

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0131540

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HYDRODYNAMIC STUDIES OF DISPERSED GAS LIQ. (AIR WATER, AIR SATD. CUSO SUB4 SOLN., 3PERCENT CO SUB2 IN AIR 1.8N NAOH) AND GAS LIQ. SOLID (AIR SATD. CUSO SUB4 SOLN. CUSO SUB4 CRYSTALS) SYSTEMS WERE CONDUCTED IN A PLANAR (2-DIMENSIONAL) FOAMING APP. MODEL AT GAS VELOCITIES SMALLER THAN OR EQUAL TO 2.5 M-SEC. CHANGES IN THE SURFACES OF THE CONTACTING PHASES AND CHANGES IN STRUCTURE WERE FOLLOWED CINEMATographically. THREE DISTINCT HYDRODYNAMIC REGIMES WERE IDENTIFIED WHICH VARIED WITH THE GAS VELOCITY W; AT LOW W, THE GAS WAS DISPERSED IN THE LIQ.; AT INTERMEDIATE W, AN INVERSION OF PHASES OCCURRED AND CLUSTERS OF LIQ. DROPLETS AND GAS BUBBLES (VOIDS) WERE PRESENT; AND AT HIGH W, THE LIQ. WAS FULLY DISPERSED IN THE GAS. CHANGES IN THE GAS VOL. FRACTION, SP. CONTACTING SURFACE OF THE CLUSTER, AND PRESSURE DROP CHANGES IN THE LAYERS DETD. AS A FUNCTION OF TIME ARE DISCUSSED; TWO MODES OF GAS FILLING OF THE LIQ. CLUSTERS AND OF THE VOIDS WERE OBSD. AND ARE DISCUSSED.

FACILITY: LENINGRAD. TEKHNOL. INST. IM. LENSOVETA, LENINGRAD, USSR.

UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0126235

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DEPENDENCE OF THE DRIVING FORCE OF ABSORPTION WITH CHEM. REACTION ON SOME PROPERTIES OF THE LIQ. PHASE AND ON THE PROCESSES TAKING PLACE IN IT WAS STUDIED THEORETICALLY AND EXPTL. IN A SYSTEM OF SO SUB2 (AIR) AND AQ. SOLNS. OF NA SUB2 CO SUB3 UNDER FOAMING CONDITIONS IN A FOAM APP. THE RATE OF ABSORPTION DOES NOT DEPEND LINEARLY ON THE SO SUB2 PARTIAL PRESSURE. IT IS ALSO A FUNCTION OF THE CONCN. OF THE ACTIVE PART OF THE ABSORBENT IN SOLN. THE DEPENDENCE OF THE ABSORPTION RATE ON THE AV. DRIVING FORCE IS EXPRESSED BY A STRAIGHT LINE WITHIN A WIDE PRESSURE AND CONCN. RANGE. WITH AN INCREASE IN THE LIQ. FLOW (LIQ. CONSUMPTION) THE RELATIVE RESISTANCE OF THE LIQ. PHASE AND THE PARTIAL PRESSURE OF THE ABSORBED COMPONENT IN THE GAS PHASE DECREASES. AT A LIQ. CONSUMPTION OF 0.625 M PRIME3-M HR, A PARTIAL PRESSURE OF 0.04 ATM OF THE ABSORBED COMPONENT IN THE GASEOUS PHASE, AND A CONCN. OF THE ACTIVE PART OF THE ADSORBENT OF 0.1 G EQUIV.-L. THE RELATIVE RESISTANCE OF THE LIQ. PHASE IS 0.63. AT A LIQ. CONSUMPTION OF 3.5 M PRIME3-M HR UNDER OTHERWISE EQUAL CONDITIONS, THE RELATIVE RESISTANCE IS 0.325. FACILITY: LENINGRAD. TEKHNOL. INST. IM. LENSOVETA, LENINGRAD, USSR.

UNCLASSIFIED

1/2 012 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--USE OF HYDROGEN TO REDUCE A FUSED IRON CATALYST -U-

AUTHOR--(05)-LOKTEV, S.M., MUKHLENOV, I.P., DARDVSKIKH, I.F., ZVEZDKINA,  
L.I., YAKOVLEVA, G.L.  
COUNTRY OF INFO--USSR

SOURCE--KHIM. PROM. (MOSCOW) 1970, 46(2), 108-12

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ELECTROLYTIC REDUCTION, IRON, CATALYST, CATALYTIC ORGANIC  
SYNTHESIS, ALIPHATIC ALCOHOL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1997/0738

STEP NO--UR/0064/70/046/002/0108/0112

CIRC ACCESSION NO--AP0119645

UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0119645

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE OPTIMUM CONDITIONS FOR THE REDN. OF THE FE OXIDE MIXT. (CONTG. FE 0.4, FE<sub>2</sub>O<sub>3</sub> 32.1, FE SUB<sub>2</sub>O SUB<sub>3</sub> 64, STRUCTURE FORMING AGENTS 2.78, AND K SUB<sub>2</sub>O 0.5 WT. PERCENT) BY H IN THE MANUFG. OF A COM. FE CATALYST (USED IN THE SYNTHESIS OF HIGHER ALIPHATIC ALCS.) ARE: 350DEGREES, 50 ATM, LINEAR VELOCITY OF THE H IS LARGER THAN 11 CM-SEC, TIME 20 HR; THE TIME CAN BE REDUCED TO 3 HR BY INCREASING THE TEMP. TO 450DEGREES, AT 20-40 ATM. ELECTROLYTIC H (99.5 VOL PERCENT H<sub>2</sub>) IS USED FOR THE REDN.; THE PARTICLE SIZE BEFORE THE REDN. SHOULD BE 1-3 MM. THE REDUCED CATALYST CONTAINS 90-5PERCENT FE AND HAS A SP. SURFACE OF 14-16 M PRIME<sup>2</sup>-G; ITS SERVICE LIFE IN SYNTHESIS PROCESSES AT 170-80DEGREES IS LARGER THAN 1000 HR.

UNCLASSIFIED

172 016 UNCLASSIFIED PROCESSING DATE--11SEP70  
TITLE--KINETICS OF METHANOL DECOMPOSITION ON A ZINC-CHROMIUM-COPPER  
CATALYST -U-  
AUTHOR--NUKHLENOV, I.P., POMERANTSEV, V.M., SYRKINA, M.L.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(2), 362-6  
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--METHANOL, CATALYTIC DECOMPOSITION, METAL CATALYST, ZINC,  
CHROMIUM, COPPER, CHEMICAL LABORATORY APPARATUS, CATALYST ACTIVITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1987/0461

STEP NO--UR/0080/70/043/002/0362/0367

CIRC ACCESSION NO--AP0104074

UNCLASSIFIED



2/2 016

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC. ACCESSION NO--AP0104074

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DECOMP. PROCESS WAS STUDIED IN LAB. EXPTS. IN A FLOW THROUGH CIRCULATING APP. AT THE FOLLOWING OPERATING CONDITIONS: QUANTITY OF THE CATALYST 1 CM PRIME3, REACTION TEMP. 240 TO 340DEGREES, CONTACT TIME 0.18 TO 0.36 SEC, AND THE CHEM. COMPN. OF THE FEED MIXT.: CO 10 TO 20, MECH 4 TO 10, AND H 70 TO 86 VOL. PERCENT. THE INVESTIGATED CATALYST (GRAIN SIZE 0.7 MM, ZNO 45.4, CR SUB2 O SUB3 21.2, AND CUO 33.4 WT. PERCENT) WAS REDUCED WITH H AT 280DEGREES FOR 8 HR AND STABILIZED AT 350DEGREES FOR 60 HR. THE DEGREE OF THE MECH. DECOMP. WAS REGARDED AS THE MEASURE OF THE CATALYST ACTIVITY. THE RESULTS ARE PRESENTED IN FORM OF DIAGRAMS. THE FOLLOWING KINETIC EQUATION IS PROPOSED:  $U = K (P_M^{0.25} - P_{CO}^{0.25})$ , WHERE U IS THE RATE OF THE REACTION MECH YIELDS CO PLUS 2H SUB2, K IS THE RATE CONST., AND P\_M AND P\_CO ARE THE PARTIAL PRESSURES OF MECH AND CO, RESP. THE CALCD. RATE CONSTS. ARE 1.44, 2.9, AND 3.85 FOR 301, 322, AND 329.5DEGREES, RESP. THE DECOMP. OF MECH IS A CONSECUTIVE PROCESS. THE LIMITING STAGE IS THE DESORPTION OF CO FROM THE CATALYST SURFACE.

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--30OCT70

1/2 019

TITLE--DISPLACEMENT OF DRILLING MUD FROM AN ANNULAR SPACE BY A POLYMER  
CEMENT MIXTURE -U-

AUTHOR--(03)--MUSTAFAYEV, A.D., MUKHMUDOV, M.N., TAGIYEV, YU.B.

COUNTRY OF INFO--USSR

SOURCE--AZERB. NEFT. KHOZ. 1970, (2), 18-20

DATE PUBLISHED--70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--WELL DRILLING MACHINERY, MUD, CEMENT, POLYMER, DRILLING MUD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3003/0142

STEP NO--UR/0487/70/000/002/0018/0020

CIRC ACCESSION NO--AP0129398

UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0129398

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. A POLYMER CEMENT MIXT. (COMPOSED OF A LIQ. POLYMER AND CEMENT MORTAR (A. D. MUSTAFAEV, 1968)) IS PROPOSED FOR THE DISPLACEMENT OF DRILLING MUD FROM THE ANNULAR SPACE AND REINFORCEMENT OF OIL AND GAS WELLS.

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